TECHNOLOGY NEEDS/OPPORTUNITIES STATEMENT

CONTROL OF EQUIPMENT CORROSION CAUSED BY CHLORIDE

Identification No.: RL-MW021
Date: October 2001

Program: Waste Management
OPS Office/Site: Richland Operations Office/Hanford Site
PBS No.: RL-CP02
Waste Stream: 3943 – 242-A Evaporator Process Condensate
TSD Title: TBD
Operable Unit (if applicable): N/A
Waste Management Unit (if applicable): N/A
Facility: 200 Area Effluent Treatment Facility (ETF).

Priority Rating:

This entry addresses the "Accelerated Cleanup: Paths to Closure (ACPC)" priority:

____ 1. Critical to the success of the ACPC.
____ 2. Provides substantial benefit to ACPC projects (e.g., moderate to high life-cycle cost savings or risk reduction, increased likelihood of compliance, increased assurance to avoid schedule delays).
_X_ 3. Provides opportunities for significant, but lower cost savings or risk reduction, and may reduce uncertainty in ACPC project success.

Need Title: Control of Equipment Corrosion Caused by Chloride.

Need/Opportunity Category: *Technology Opportunity* – The Site desires an alternative to the current baseline technology.

Need Description: A method is needed to control or prevent chloride corrosion of stainless steel piping and process equipment at the ETF. Several of the waste water streams on the Hanford Site contain elevated levels of chloride. Stainless steel materials are used extensively in the ETF. Treatment of waste water with high concentrations of chloride may result in accelerated corrosion of the stainless steel components.

Schedule Requirements:

Earliest Date Required: (10/01/02)

Latest Date Required: (09/30/04)

This is an ongoing need. Desired to implement by FY 2004.

***Problem Description*:** Stainless steel materials are subject to increased corrosion rates in the presence of chloride.

Potential Life-Cycle Cost Savings of Need (in $000s) and Cost Savings Explanation: Potential life cycle saving of $1,000K is estimated.

Benefit to the Project Baseline of Filling Need: Extended equipment life.

Relevant PBS Milestone: N/A

***Functional Performance Requirements*:** A method to control and measure the amount of corrosion resulting from the treatment of waste water with elevated levels of chloride.

***Work Breakdown Structure (WBS) No.*:**	***TIP No.:***
1.2.3	N/A

***Justification For Need*:**

Technical: Chlorides are known to cause corrosion of stainless steel materials.

Regulatory: Waste water containing elevated levels of chloride must be treated to meet discharge requirements. No other means of treatment exists on the Hanford Site.

Environmental Safety & Health: N/A.

Cultural/Stakeholder Concerns: N/A.

Other: N/A.

Current Baseline Technology: None

End-User: Waste Management Hanford, Inc.

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Waste volume, m^3	N/A
Waste form	Liquid
Waste stream I.D.	3943
Contaminants and co-contaminants	Chloride
Function of technology	Control chloride corrosion
Source category	Multiple waste water sources